Fusion3

F200 3D Printer
EDGE 3D Printer

OPERATION:
NETWORKING (ETHERNET & WIFI)

Revision 2/3/2026

USING YOUR FUSION3 PRINTERS ON YOUR LOCAL NETWORK

How to configure EDGE & F200 for your wired or wireless networks, how to use them over your network, configuration instructions for your IT dept, and how to use their advanced networking features.

This document supersedes the individual networking documents for wired and wireless networking.

ETHERNET CONFIGURATION & TROUBLESHOOTING

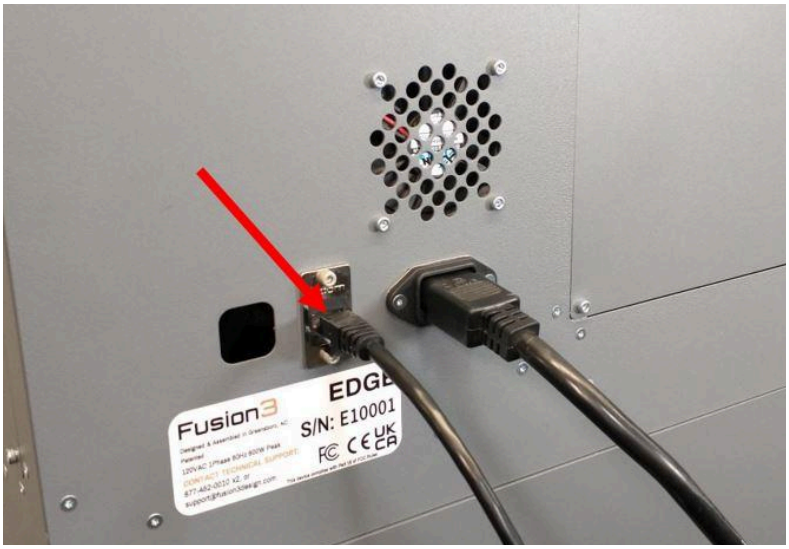
Both the STANDARD and SECURE variants of EDGE, and ALL F200s, have built-in wired (ethernet) networking. This can be configured in two ways:

- As a normal ethernet connection: Your printer is connected to a router, which assigns an IP address & other network parameters to allow communication with the rest of the network.
- As a direct connection between a computer and your printer, without the need for a router or other network gear.

Connecting to a Standard Wired Network

1. Connect a standard ethernet cable to the ethernet port on the back of the printer. This is located near the power port.

2. Make sure the other end of the cable is connected to your network (a wall port, router, or other network gear).



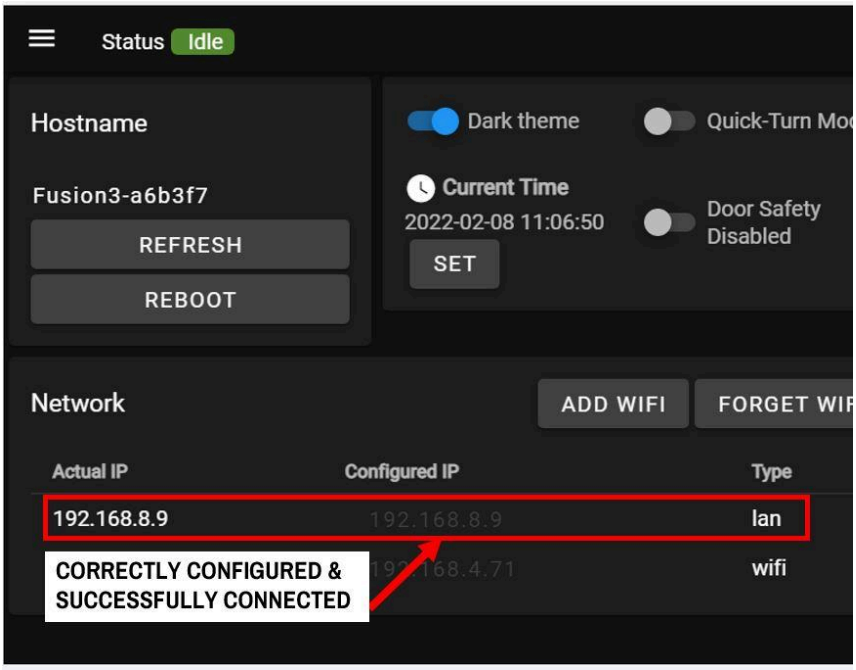
3. In **most situations** / networks with DHCP enabled, your network will automatically recognize your printer, and assign an IP address and other network parameters.

4. Verify that you have a working connection:

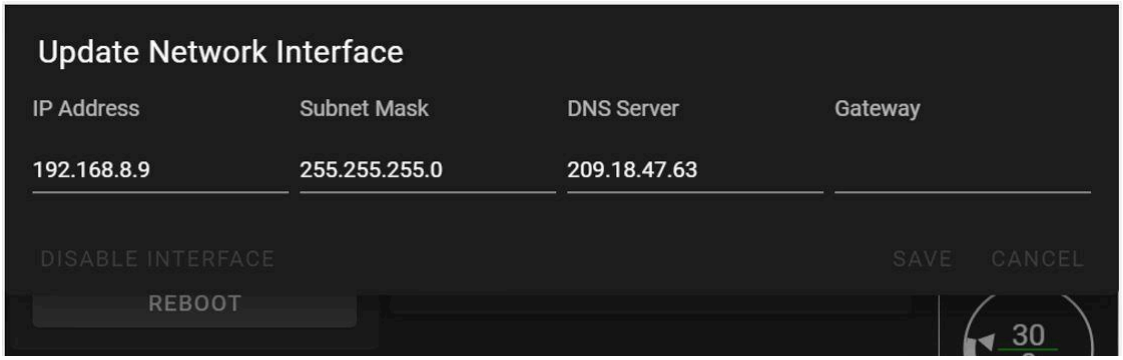
    a. Go to *Menu* > *Settings* > and look at the network list at the bottom of the page. You should see an entry with the following characteristics:

        i. "*Actual IP*" and "*Configured IP*" are the same

        ii. "*Type*" will say "*lan*"



5. If you need to adjust any network settings, press on the "Configured IP" address. A dialog box will pop up. Here you can adjust gateway, netmask, DNS server, etc.



NOTE: We recommend NOT adjusting any of these settings unless you have a specific need based on your network's configuration. If your network is complex enough to require changes here, please consult your network admin or IT department for assistance.

Direct Connection to a Computer (Advanced Users Only)

1. Connect an ethernet cable to the port on the printer, and your computer's ethernet port. You can use a standard (non-crossover) cable.

2. Manually configure an IP address for the printer on the *Menu* > *Settings* > page.

    a. Manually set an IP address and a subnet. You can leave the rest of the settings blank.

    b. For example: IP = 192.168.9.1; subnet = 255.255.0.0

3. In your computer's network settings, manually configure your ethernet connection to have the same subnet and an IP address in the same range.

    a. For example: IP = 192.169.9.**2**; subnet = 255.255.0.0

    b. If you do not know how to adjust your computer's network settings we recommend not using Direct Connection mode.

Ethernet Connection Troubleshooting

Networks can be incredibly complicated and can vary dramatically from location-to-location; a complete dissertation on how to fix every possible network issue is beyond the scope of this document. Here are some possible solutions to the most common issues. If you don't see your issue listed, contact our Customer Support group at:

- support@fusion3design.com
- https://www.fusion3design.com/contact-support/

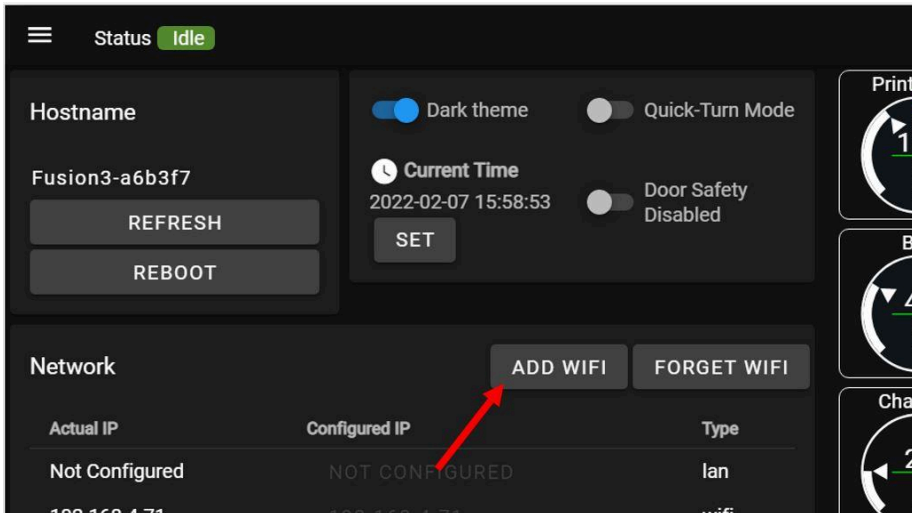
For locations with complex networks and in-house IT teams, you will also want to work closely with them to resolve any network issues encountered. These are often locations with complex networks and network policies that may require changing some default settings in order to put EDGE on the network in accordance with their policies.

If you see an IP address (or other setting) you know isn't valid:
For instance, if the printer keeps insisting on using an IP address you know is wrong. Enter all zeros for **all** the parameters (IP address, subnet, gateway, etc) and click "save" to reset the information for the network.

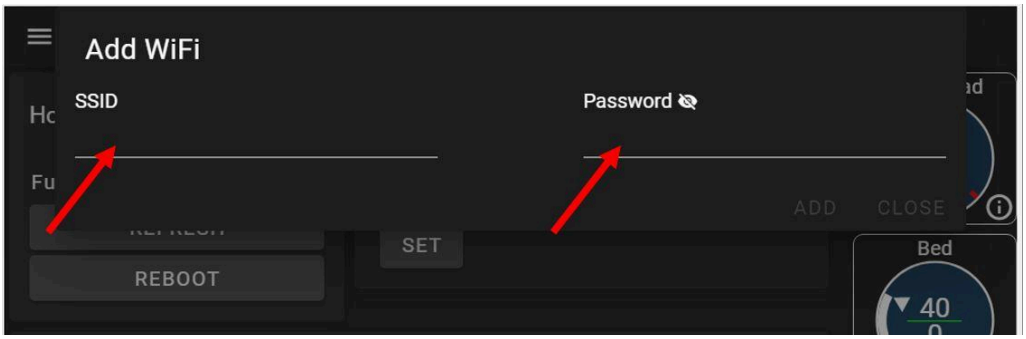
WIFI CONFIGURATION & TROUBLESHOOTING (STANDARD ONLY)

The STANDARD variant of EDGE, and ALL F200s, have wireless networking built in. The SECURE EDGE variant has no radios at all.

1. On the onboard LCD, go to *Menu* > *Settings* >
2. Press the "*ADD WiFi*" button

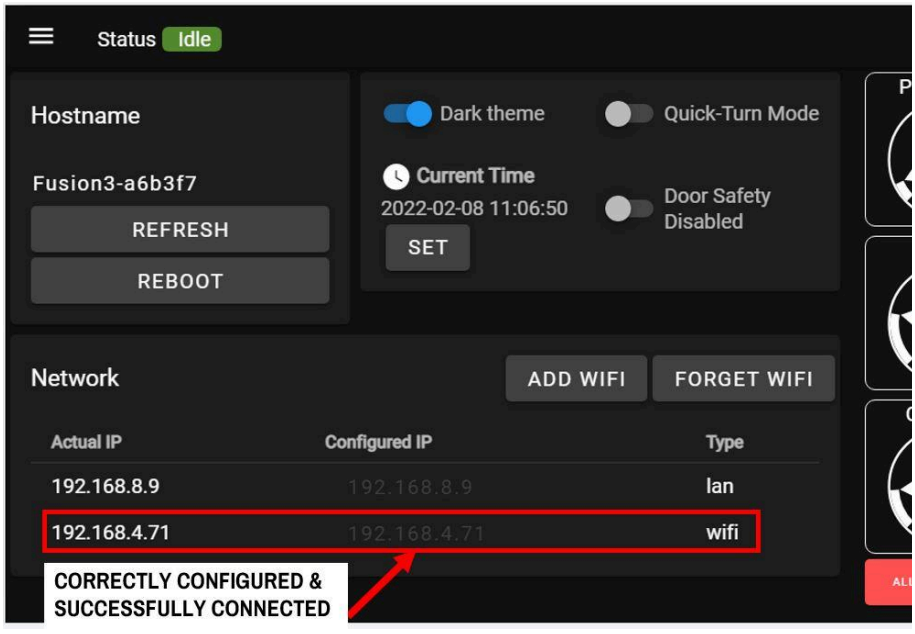


3. Enter your network's SSID and password in the dialog boxes. You can "un-hide" the password by clicking the eye icon, to make typing it in easier.



NOTE: Your WiFi network password must be at least 8 characters in length in order to work with EDGE. EDGE will not work with WiFi networks without passwords.

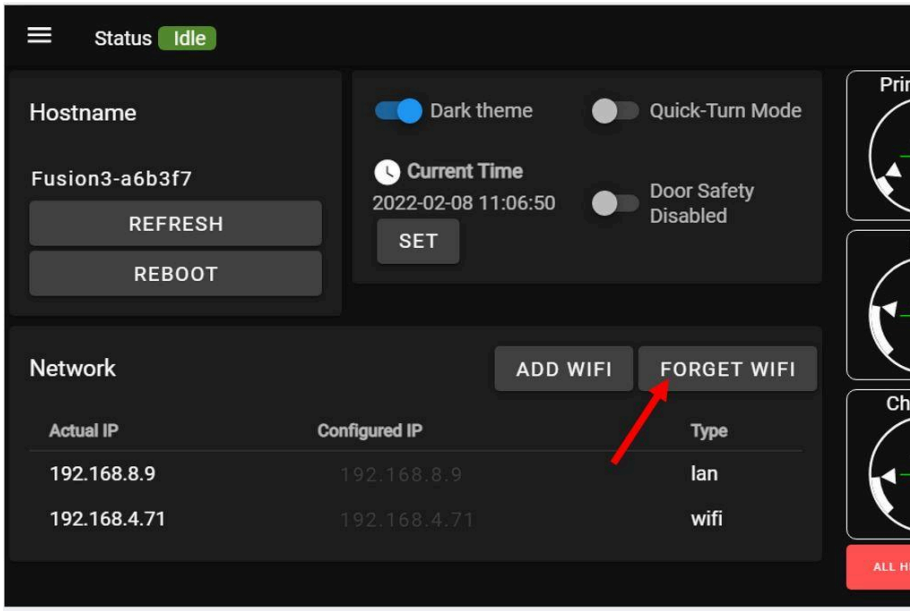
4. Press the "*ADD*" button. The printer will think for a few moments, then the interface will refresh.
5. If the printer is able to join the network, you'll see a network entry appear in the table at the bottom of the screen.
6. If the network entry doesn't show a "configured IP" that matches the "actual IP", that means it was not able to connect to the network.



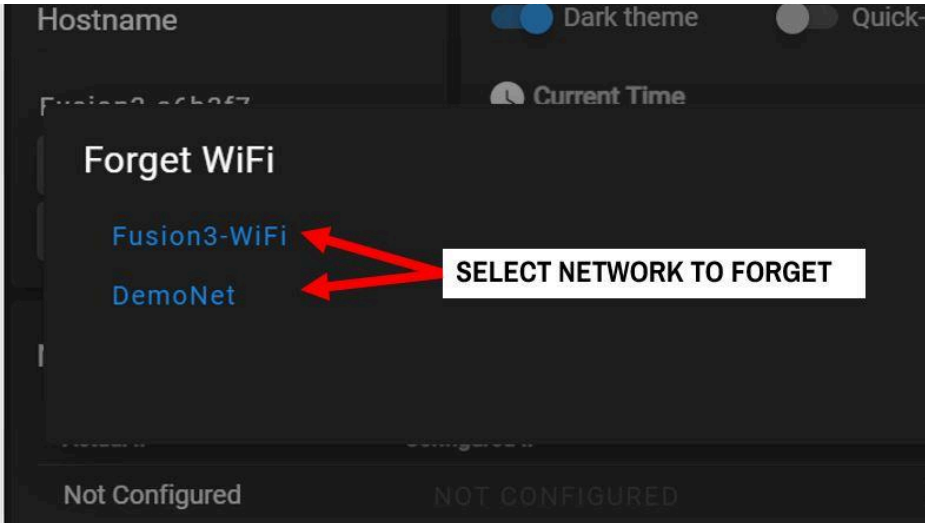
Click the "Forget Wifi" button, delete the network entry you just added, and try again from step 2.

Removing A Wireless Network

1. On the onboard control panel, go to *Menu > Settings >*
2. Press the "*FORGET WIFI*" button.



3. Select the network you wish to forget from the list.
4. NOTE: All networks you've entered on the device will appear here, even if the printer is not currently connected to them, or if the connection failed.



Troubleshooting Wireless Networking

Wireless networking can encounter a myriad of problems. Here are some possible solutions to the most common issues. If you don't see your issue listed, contact our Customer Support team at:

- support@fusion3design.com
- https://www.fusion3design.com/contact-support/

If you do not see an entry appear in the network table, try the following:

1. Power cycle the printer completely off and then back on. Check for an entry in the network table once the printer boots up completely.
2. If you still don't see a network entry, try deleting your network ("Forget Wifi" button) and re-adding the network.

If you see a (valid) IP address in the network table, but can't connect with your computer:
Usually this is caused by your computer and the printer ending up on different subnets that cannot talk to each other. Resolving this usually requires the intervention of your network admin or IT department. You can occasionally fix this by deleting the network and re-adding it, and hoping for a different subnet, but this is hit-and-miss.

This could also be caused by a network policy blocking certain communications on your network. In most cases if your network is complex enough for this, your best course of action is to consult your network admin / IT department. See below for more information.

If you see an IP address that you know or suspect is not valid:
This is normally caused by some unique characteristic of your network that is beyond our scope to fix. We've also seen this caused by misbehaving WiFi bridges or range extenders. Like other issues listed, this can sometimes be fixed by a power cycle.

If the entry for the network is "stuck" with settings you know are not correct:
For instance, if the printer keeps insisting on using an IP address you know is wrong. Enter all zeros for **all** the parameters (IP address, subnet, gateway, etc) and click "save" to reset the information for the network. You can also delete the network and enter it again.

Advanced Topic: Configuring a Static IP Address on Wifi

In our experience, most local network DHCP systems rarely change a device's IP address once it's set, so please do not feel like you must set a static IP just to keep the printer on a consistent IP.

NOTE: We can provide instructions on configuring a static IP; however the complete set up requires coordination with your local network's DHCP server and IP address ranges, which is beyond the scope of this document. Please consult your network admin/IT department.

By default, wifi on your printer is set up to look for a DHCP address from your network. If you need to configure a static IP address, follow the procedure below.

On the *Utilities > Console*, enter the following command:

M587 S"yournetworkssid" P"yournetworkpassword" I[your desired static ip] J[your network's subnet mask]

Example: M587 S"DemoNet" P"password" I192.168.1.187 J255.255.255.0

Next, go to the *Settings* page and press the "REBOOT" button to reboot the single board computer so it applies your new network settings.

To Revert to a DHCP Address:

Enter the same M587 command with the S and P parameters filled out. Enter "0.0.0.0" for the I and J parameters.

CONFIGURATION INSTRUCTIONS FOR YOUR IT DEPARTMENT

If you have a large corporate network and/or an IT department that needs to/wants to configure your printer for your network, refer them to this section.

FUSION3 3D PRINTERS ARE NOT A MANAGED PRINTER. Please do not attempt to configure it like you would a conventional (2D) paper printer.

Fusion3 printers access your local network just like a normal PC.

Users access the printer over your local network with a conventional web browser. The printer hosts its own web page on port 80 / port 443. Please make sure your network does not block those ports internally.

DHCP vs Static IP

While it's possible to configure your printer with a static IP address on your network, we recommend against it. In most cases, DHCP-provided addresses remain consistent for long periods of time. So unless your network is specifically configured to have short DHCP leases, and the end user is complaining that the printer's IP changes all the time, a DHCP-provided address is the way to go.

For information on how to configure a static IP, please see the relevant sections in the wired or wireless networking sections.

Remote Support Capabilities

EDGE & F200 have built-in remote support capabilities. In order to use these capabilities:

- The printer must be connected to a network with internet access.
- The following ports must be unblocked on your firewall:
    - 21115
    - 21116

- 21117
- 21118
- 21119

The remote support tool is rustdesk-based. The user remains in full control of accepting or denying the remote connection at all times. There is no way for Fusion3 personnel or a remote attacker to log into the printer unless a user is physically present at the machine to allow the connection.

"Phoning Home"

Fusion3 printers do not "phone home" or share data with Fusion3 or anyone else.

USING YOUR PRINTER OVER YOUR LOCAL NETWORK

1. Open a web browser on an internet-capable device (PC, tablet, phone, etc) on the SAME network your printer is on.
2. In the address bar, type in the IP address that your printer displays in its network list, under "actual IP". Press enter.
3. Your printer will deliver a web page that shows you roughly the same user interface as you see on the onboard LCD. From this interface, you can upload prints, start, pause, stop prints, and do everything you can do on the onboard LCD.

NETWORKING FAQ

Can I configure my Fusion3 printer as a managed printer or manage it similarly to a networked 2D printer?
No; Fusion3 printers work completely differently. Users must interact with it using the hosted web page on the network.

Can multiple devices connect to my printer at the same time?
Yes, however care should be taken that multiple users are not trying to actually use the printer at the same time (eg trying to start prints).

Does my printer need to be connected to a network to function?
No, it's perfectly happy to run without a network connection. HOWEVER, in order to use our remote-support tool and perform certain updates to the printer, you will need it on your network. We strongly recommend using EDGE and F200 over your local network.

How will I know I've successfully connected EDGE or F200 to my network?

It will display a valid IP address in the network list ("configured IP" column), and you'll be able to connect to the printer's hosted web page using the IP address on another networked device.

Is there a way to prevent network connection with my printer?
Yes. Simply leave the ethernet cable unplugged and don't connect it to a wireless network. EDGE or F200 will not try to connect to a network without your instructions to do so.

The network interface can be disabled in software by sending "M552 S0" on the console.

Do Fusion3 printers "phone home" and share my data when it has a network connection?
No. We understand most of our customers are businesses who want to maintain strict control over their data. We specifically designed our products to never phone home or share data with anyone (including us) without a human in the loop.

I want my printer to be accessible via the internet outside my building. How do I do this?
You can use the built-in remote support tool, or see our separate document "LONG PRINTS & REMOTE ACCESS" (F200) or THE SAME DOCUMENT FOR EDGE.

Can you upload gcode directly from your slicer through this network connection?
No. You must save it to your hard drive first and then upload it via the network interface.

Can I power the printer off via the network?
No, our printers' power switch is a physical switch not a "soft button" as is common on lower power consumer devices.

~~**Can I rename my printer from the pseudo-random name it has now?**~~
~~Your EDGE will come with a unique pseudo-random name assigned, such as "Fusion3-10caee". You can replace this name with one of your choosing, by adding a M550 parameter to /files/sys/config.g. For more information: https://docs.duet3d.com/User_manual/Reference/Gcodes#m550-set-name~~